

Claims:

1. A method for genetically engineering a primate for expression of a desired gene, comprising introducing into the primate a transgene comprising an RSV promoter and a nucleic acid sequence heterologous to said RSV promoter.
2. The method of claim 1 wherein the transgene comprises an RSV promoter operably linked to a nucleic acid comprising a selected ORF.
3. The method of claim 1 wherein the transgene comprises an RSV promoter and primate nucleic acid sequence.
4. The method of any of claims 1 - 3 wherein the RSV promoter comprises a sequence selected from a long terminal repeat of a strain of the Rous Sarcoma Virus.
5. The method of claim 4 wherein the selected RSV promoter sequence contains at least 50 nucleotides.
6. The method of any of claims 1 - 3 wherein the RSV promoter comprises a sequence which hybridizes under stringent conditions to a sequence selected from a long terminal repeat of a strain of the Rous Sarcoma Virus.
7. The method of any of claims 1 - 3 wherein the RSV promoter comprises a sequence of at least 50 nucleotides present in nucleotides 90-612 of Seq ID #1.
8. The method of any of claims 1 - 3 wherein the RSV promoter comprises at least the sequence 550-612 of Seq ID #1.
9. The method of any of claims 1 - 3 wherein the RSV promoter comprises a sequence of at least 20 nucleotides present in nucleotides 90-612 of Seq ID #1, with up to 5 nucleic acid substitutions, insertions or deletions.

10. The method of any of claims 1 - 3 wherein the RSV promoter comprises the sequence 349-612 of Seq ID #1 or a nucleic acid which hybridizes thereto under stringent conditions.
11. The method of any of claims 1 - 3 wherein the RSV promoter comprises the sequence 126-612 of Seq ID #1 or a nucleic acid which hybridizes thereto under stringent conditions.
12. The method of any of claims 1 - 3 wherein the RSV promoter comprises the sequence 90-612 of Seq ID #1 or a nucleic acid which hybridizes thereto under stringent conditions.
13. The method of any of claims 1-12, wherein the transgene is packaged in a virus.
14. The method of claim 5, wherein the virus is selected from the group consisting of adenovirus, AAV, retrovirus, hybrid adeno-AAV, herpesvirus and lentivirus.
15. The method of any of claims 1-14, wherein the primate is a human.
16. The method of any of claims 1-15, wherein the transgene is introduced into the muscle of the primate.
17. The method of any of claims 1-15, wherein the transgene is introduced into the liver of the primate.
18. The method of any of claims 1-15, wherein the transgene is introduced into the central nervous system of the primate.
19. The method of any of claims 1-15, wherein the primate cells are engineered ex vivo and are introduced into the primate.
20. A method for genetically engineering a primate for regulatable expression of a target gene which method comprises introducing into the primate a transgene comprising an RSV promoter operably linked to at least one recombinant nucleic acid encoding one or more fusion proteins,

wherein the one or more fusion proteins bind to a ligand and in the presence of said ligand modulate(s) the expression level of a target gene.

21. The method of claim 20 wherein the target gene is endogenous to the primate.

22. The method of claim 20 wherein the target gene is heterologous to the primate.

23. The method of claim 20 wherein the presence of the ligand increases the expression level of the target gene.

24. The method of claim 20 wherein the presence of the ligand decreases the expression level of the target gene.

25. The method of claim 20 wherein the fusion protein contains a ligand binding domain which is or is derived from an immunophilin, cyclophilin, FRB, antibiotic resistance or hormone receptor domain.

26. The method of claim 25 wherein the ligand binding domain is or is derived from FKBP, tetR, progesterone receptor or ecdysone receptor.

27. A primate cell containing and capable of expressing a transgene comprising an RSV promoter operably linked to at least one recombinant nucleic acid encoding one or more fusion proteins, wherein the one or more fusion proteins bind to a ligand and in the presence of said ligand modulate(s) the expression level of a target gene.

28. The cell of claim 27 wherein the target gene is endogenous to the primate.

29. The cell of claim 27 wherein the target gene is heterologous to the primate.

30. The cell of claim 27 wherein the presence of the ligand increases the expression level of the target gene.

31. The cell of claim 27 wherein the presence of the ligand decreases the expression level of the target gene.

32. The cell of claim 27 wherein the fusion protein contains a ligand binding domain which is or is derived from an immunophilin, cyclophilin, FRB, antibiotic resistance or hormone receptor domain.

33. The cell of claim 32 wherein the ligand binding domain is or is derived from FKBP, tetR, progesterone receptor or ecdysone receptor.

Downloaded from www.sciencedirect.com